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19. (Amended) The method of claim 18 wherein said brake band is locked in said applied position after the completion of said shift.

20. (Amended) The method of claim 18 wherein a switch between ramping up and closed loop control is determined by inputs selected from the group consisting of servo position, apply strut strain, servo pressure, band strain, engine RPM, transmission torque output, and combinations thereof.

REMARKS

Claims 1-23 are pending.

Claims 1-23 are rejected.

Claims 2, 3, 10, 16 and 17 have been canceled, without prejudice.

Claims 1, 4-9, 11-15 and 18-20 have been amended. Support for these amendments can be found throughout the specification, claims, and drawings, as originally filed. The marked-up version of these claims can be found on the last page of this response.

The drawings have been amended to include element numbers contained in the specification that were inadvertently omitted from the drawings, as well as to correct typographical errors. The Applicants aver that no new matter has been added by virtue of these amendments. A request for proposed drawing correction is being submitted concurrently with the instant amendment.

OBJECTION TO THE DRAWINGS

The drawings stand objected to as failing to comply with 37 C.F.R. 1.84(p)(5).

The Applicants respectfully traverse the objection.

In the interests of expediting prosecution of the instant application, and without admission that any amendment is necessary, the drawings have been amended to include element numbers contained in the specification that were inadvertently omitted from the drawings, as well as to correct typographical errors. The Applicants aver that no new matter has been added by virtue of these amendments. A request for proposed drawing correction is being submitted concurrently with the instant amendment.

Specifically, Figure 3 has been amended to change element number 48 to element number 46. Figure 4 has been amended to refer to element numbers 130, 132, 136, and 138, change element number 104 to element number 134, and change element number 114 to element number 140. Element number 74 is clearly shown in the upper right-hand quadrant of Figure 4, and thus no amendment is needed. Figure 6 has been amended to refer to element number 176.

With respect to Figure 5, the Applicants submit that amendment is not required as the hydraulic circuit is shown in isolation for purposes of clarity, apart from the other elements of the present invention. The Applicants are unaware of any requirement that each and every drawing figure of a patent application must contain a depiction of, and/or a reference to, every element of the claimed invention. If this objection is maintained, the Applicants respectfully request specific citation of such a requirement in a subsequent official action. Furthermore, as the Examiner correctly noted, Figure 6 provides a more detailed view of the hydraulic circuit shown in physical cooperation with

the servo system. Accordingly, the entire specification, in conjunction with the drawings (including but not limited to Figures 5 and 6), provides one of ordinary skill the art the requisite information for practicing the best mode of the claimed invention.

Accordingly, the Applicants submit that the objection to the drawings has been overcome.

OBJECTION TO SPECIFICATION

The specification stand objected to as failing to provide proper antecedent basis for the claimed subject matter.

The Applicants respectfully traverse the objection.

The specification, at Page 8, lines 4-7, provides clear support for the recitation in claim 5 (as well as claim 11) of a linkage sensor. This passage states: "A position detector 98 senses the position of a magnet 100 to determine the position of the actuator arm 68. By knowing the position of the actuator arm 68, the mechanism controller knows the distance that servo applying the band 14 can be moved before the band contacts the drum 12." The control arm 68 is physically linked to attachment arm 134 and comprises, along with other elements, at least a portion of the claimed linkage.

Accordingly, the Applicants submit that the objection to the specification has been overcome.

REJECTION UNDER 35 U.S.C. § 112

Claims 14 and 20 stand rejected under 35 U.S.C. §112, first paragraph, as containing subject matter which was not described in the specification in such a way as

to enable one skilled in the art to which it pertains, or with which it most nearly connected, to make and/or use the invention.

The Applicant respectfully traverses the 35 U.S.C. §112, first paragraph, rejection of claims 14 and 20.

In the interests of expediting prosecution of the instant application, and without admission that any amendment is necessary, claims 14 and 20 have been amended to contain language that is clearly supported by the instant specification.

Accordingly, the Applicants submit that the 35 U.S.C. §112, first paragraph, rejection of claims 14 and 20 has been overcome.

REJECTION UNDER 35 U.S.C. § 112

Claims 1-23 stand rejected under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Applicant respectfully traverses the 35 U.S.C. §112, second paragraph, rejection of claims 1-23. Claims 2, 3, 10, 16 and 17 have been canceled, without prejudice. Accordingly, the 35 U.S.C. §112, second paragraph, rejection of these claims is moot.

In the interests of expediting prosecution of the instant application, and without admission that any amendment is necessary, claims 1, 8, 9, 13, 15, 18, 19 and 20 have been amended to remove allegedly indefinite language. Furthermore, dependent claims 4-7, 11, 12, 14, 17, and 21-23 are now definite in light of the aforementioned amendments to claims 1, 8, 9, 13, 15, 18, 19 and 20.

Accordingly, the Applicants submit that the 35 U.S.C. §112, first paragraph, rejection of claims 1, 4-9, 11-15, and 18-23 has been overcome.

REJECTION UNDER 35 U.S.C. § 102(b)

Claims 1-3, 7 and 8 stand rejected under 35 U.S.C. §102(b), as being anticipated by U.S. Patent No. 5,752,588 to Reichert et al.

The Applicants respectfully traverse the 35 U.S.C. §102(b) rejection of claims 1-3, 7 and 8. Claims 2 and 3 have been canceled, without prejudice, and substantially incorporated into claim 1.

The law is clear that anticipation requires that a single prior art reference disclose each and every limitation of the claim sought to be rejected. 35 U.S.C. 102(b).

The law is also clear that a claim in dependent form shall be construed to incorporate all the limitations of the claim to which it refers. 35 U.S.C. 112, fourth paragraph.

In the interests of expediting prosecution of the instant application, and without admission that any amendment is required, the Applicants have amended claim 1 to recite, among other things, a brake band mechanism for an automatic transmission having a brake drum, said mechanism comprising: (1) a brake band encircling the brake drum, said brake band including opposing ends, said brake band operable to be compressed and expanded around the brake drum; (2) a two-stage hydraulic servo; and (3) a linkage coupled to said servo and said brake band, said servo activating said linkage to provide positive compression and expansion to said brake band for applying friction to the brake drum to control the brake drum's speed of rotation; wherein said

servo provides a rapid activation of said linkage during a first stage to rapidly expand said brake band, and a controlled compression and expansion of said brake band during a second stage.

Reichert et al. teaches no such structure.

Specifically, while Reichert et al. may arguably disclose a two-stage hydraulic circuit, there is no teaching that the "servo provides a rapid activation of [the] linkage during a first stage to rapidly expand [the] brake band, and a controlled compression and expansion of [the] brake band during a second stage."

Accordingly, the Applicants contend that the 35 U.S.C. 102(b) rejection of 1, 7 and 8 has been overcome.

Furthermore, the Applicants submit that Reichert et al. does not render claims 1, 7 and 8 obvious.

The standard for obviousness is that there must be some suggestion, either in the reference or in the relevant art, of how to modify what is disclosed to arrive at the claimed invention. In addition, "[s]omething in the prior art as a whole must suggest the desirability and, thus, the obviousness, of making" the modification to the art suggested by the Examiner. *Uniroyal, Inc. v. Rudkin-Wiley Corp.*, 837 F.2d 1044, 1051, 5 U.S.P.Q.2d (BNA) 1434, 1438 (Fed. Cir.), cert. denied, 488 U.S. 825 (1988). Although the Examiner may suggest the teachings of a primary reference could be modified to arrive at the claimed subject matter, the modification is not obvious unless the prior art also suggests the desirability of such modification. *In re Laskowski*, 871 F.2d 115, 117, 10 U.S.P.Q.2d (BNA) 1397, 1398 (Fed. Cir. 1989). There must be a teaching in the prior art for the proposed combination or modification to be proper. *In re Newell*, 891 F.2d

899, 13 U.S.P.Q.2d (BNA) 1248 (Fed. Cir. 1989). If the prior art fails to provide this necessary teaching, suggestion, or incentive supporting the Examiner's suggested modification, the rejection based upon this suggested modification is error and must be reversed. *In re Bond*, 910 F.2d 831, 15 U.S.P.Q.2d (BNA) 1566 (Fed. Cir. 1990).

As previously noted, while Reichert et al. may arguably disclose a two-stage hydraulic circuit, there is no teaching or suggestion that the "servo provides a rapid activation of [the] linkage during a first stage to rapidly expand [the] brake band, and a controlled compression and expansion of [the] brake band during a second stage." The instant application discloses, at page 9, lines 6-14, that:

At the beginning of the shift, shown as ramp 1, the rapid apply piston 62 of the servo 28 is filled with a predetermined pressure based on, for instance, servo rod position, derived engine torque or the like, as discussed herein. As will be readily appreciated, this fill pressure may be adjusted, based on servo rod positioning or the like. This allows reaching of initial fill pressure quickly, using the quick apply piston 62 to stroke in the shortest possible time. Thus, the rapid fill at the beginning of the shift shown in ramp 1 allows the servo 28 to quickly move the piston 62. Thus, the actuator 68 quickly expands the band 14 to a position where it first contacts the drum 12.

Conversely, Reichert et al. discloses, at column 1, lines 33-39, that:

It is an object of the invention to provide an hydraulic servo with travel compensation, for friction brakes for shifting an automatic transmission for motor vehicles, in order, at the time of shift, to minimize the volume of hydraulic fluid required to apply a friction brake to avoid an undesired pressure drop due to the volume of fluid which has to be made available. (Emphasis added).

Thus, Reichert et al. appears to disclose that the supposed first stage actuation of the hydraulic servo is accomplished slowly, due to the conservation

of hydraulic fluid delivered to the pressure chamber of the supposed main piston of the servo. More specifically, Reichert et al. is concerned primarily with conserving hydraulic fluid in the event of a system leak, e.g., through the use of a compensation pressure chamber and cooperating piston, than with rapid first stage piston actuation of the hydraulic servo, as presently claimed. Accordingly, Reichert et al. appear to teach away from the claimed invention, and thus cannot render claims 1, 7 and 8 obvious.

REJECTION UNDER 35 U.S.C. § 102(b)

Claims 1-3, 7 and 8 stand rejected under 35 U.S.C. §102(b), as being anticipated by JP-11264460 (using U.S. Patent 6102825 to Hisano et al. as an English equivalent).

The Applicant respectfully traverses the 35 U.S.C. §102(b) rejection of claims 1-3, 7 and 8. Claims 2 and 3 have been canceled, without prejudice, and substantially incorporated into claim 1.

In the interests of expediting prosecution of the instant application, and without admission that any amendment is required, the Applicants have amended claim 1 to recite, among other things, a brake band mechanism for an automatic transmission having a brake drum, said mechanism comprising: (1) a brake band encircling the brake drum, said brake band including opposing ends, said brake band operable to be compressed and expanded around the brake drum; (2) a two-stage hydraulic servo; and (3) a linkage coupled to said servo and said brake band, said servo activating said linkage to provide positive compression and expansion to said brake band for applying friction to the brake drum to control the brake drum's speed of rotation; wherein said

servo provides a rapid activation of said linkage during a first stage to rapidly expand said brake band, and a controlled compression and expansion of said brake band during a second stage.

Hisano et al. teaches no such structure.

Specifically, while Hisano et al. may arguably disclose a two-stage hydraulic circuit, there is no teaching that the “servo provides a rapid activation of [the] linkage during a first stage to rapidly expand [the] brake band, and a controlled compression and expansion of [the] brake band during a second stage.”

Accordingly, the Applicants contend that the 35 U.S.C. 102(b) rejection of 1, 7 and 8 has been overcome.

Furthermore, the Applicants submit that Hisano et al. does not render claims 1, 7 and 8 obvious.

As previously noted, while Hisano et al. may arguably disclose a two-stage hydraulic circuit, there is no teaching or suggestion that the “servo provides a rapid activation of [the] linkage during a first stage to rapidly expand [the] brake band, and a controlled compression and expansion of [the] brake band during a second stage.” For example, Hisano et al. disclose at, column 3, lines 3-23:

According to the invention, the rotation of the rotational element reduces to synchronize with the rotation of the rotational element at the low speed gear stage. That is, the rotation of the rotational element reduces to stop. In this case, the de-energizing operation occurs at the band brake. Therefore, the rotational element is not stopped from rotating by the band brake, because the engagement force occurred by the application of the aforementioned hydraulic pressure is small. After that, when the rotational element is stopped from rotating and then the reverse rotation of the rotational element is started, the self-energizing operation occurs. Therefore, the engagement force of the band brake steeply increases to stop the rotational element from rotating.

In this case, the hydraulic pressure applied to the hydraulic servo of the band brake is the waiting pressure, which is lower for the predetermined amount than the hydraulic pressure to maintain the stop of the rotation of the rotational element. Therefore, the rotational element is not steeply stopped, that is, the rotation of the rotational element changes gradually. (Emphasis added).

Thus, Hisano et al. appears to disclose that the supposed first stage actuation of the hydraulic servo is accomplished slowly or weakly, due to the application of only a small amount of hydraulic pressure to the supposed main piston of the servo. Accordingly, Hisano et al. appear to teach away from the claimed invention, and thus cannot render claims 1, 7 and 8 obvious.

REJECTION UNDER 35 U.S.C. § 103(a)

Claims 4, 5, 9-11, 13, 16-21, and 23 stand rejected under 35 U.S.C. §103(a), as being unpatentable over Reichert et al. in view of U.S. Patent No. 5,003,842 to Hatta et al.

The Applicant respectfully traverses the 35 U.S.C. §103(a) rejection of claims 4, 5, 9-11, 13, 16-21, and 23.

The Examiner apparently cited Hatta et al. in order to cure the aforementioned deficiencies in the disclosure of Reichert et al. However, Hatta et al. adds nothing to the disclosure of Reichert et al. in terms of disclosing the structure and function of the two-stage hydraulic servo, wherein the servo provides a rapid activation of the linkage during a first stage to rapidly expand the brake band, and a controlled compression and expansion of the brake band during a second stage.

Because claim 1 is allowable over Reichert et al. and/or Hatta et al., either alone

or in combination therewith, for at least the reasons stated above, claims 4 and 5, which further define claim 1, is likewise allowable.

Accordingly, the 35 U.S.C. 103(a) rejection of claims 4 and 5 has been overcome.

In the interests of expediting prosecution of the instant application, and without admission that any amendment is required, the Applicants have amended claim 9 to recite, among other things, a brake band mechanism for an automatic transmission having a brake drum, said mechanism comprising: (1) a brake band encircling the brake drum, said brake band including opposing ends, said brake band operable to be compressed and expanded around the brake drum; (2) a linkage coupled to said brake band; (3) a two-stage hydraulic servo, said linkage coupled to said servo, said servo including a servo rod position sensor for determining a position of a stroke rod of said servo, said servo providing a rapid activation of the linkage during a first stage to rapidly expand said brake band, and a controlled compression and expansion of said brake band during a second stage; and (4) a clip structure, said clip structure being mounted to an end of said brake band and being coupled to said linkage, said servo activating said linkage to provide positive compression and expansion to said brake band for applying friction to the brake drum to control the brake drum's speed of rotation; wherein said servo includes a first piston and a second piston, said first piston being smaller than said second piston, said first piston being operable to provide rapid movement of said brake band and said second piston being operable to provide fine adjustments of said brake band.

Claim 10 has been canceled, without prejudice, and substantially incorporated into claim 9.

Neither Reichert et al. and/or Hatta et al., either alone or in combination therewith, teach or suggest such a structure.

Specifically, while Reichert et al. may arguably disclose a two-stage hydraulic circuit, there is no teaching of a "servo providing a rapid activation of the linkage during a first stage to rapidly expand said brake band, and a controlled compression and expansion of said brake band during a second stage; and ... [the] servo activating said linkage to provide positive compression and expansion to said brake band for applying friction to the brake drum to control the brake drum's speed of rotation; wherein said servo includes a first piston and a second piston, said first piston being smaller than said second piston, said first piston being operable to provide rapid movement of said brake band and said second piston being operable to provide fine adjustments of said brake band."

Hatta et al. does not cure the aforementioned deficiencies in the disclosure of Reichert et al.

Accordingly, the 35 U.S.C. 103(a) rejection of claim 9 has been overcome.

Because claim 9 is allowable over Reichert et al. and/or Hatta et al., either alone or in combination therewith, for at least the reasons stated above, claim 11, which further defines claim 9, is likewise allowable.

In the interests of expediting prosecution of the instant application, and without admission that any amendment is required, the Applicants have amended claim 13 to recite, among other things, a method of controlling a shift of an automatic transmission

comprising: (1) providing a brake band for engaging a brake drum of an automatic transmission, said brake band being positively controlled for both apply and release pressure around said brake drum; (2) applying a first fast active compression force to said brake band to a predetermined position; and (3) providing a closed loop control of pressure on said brake band in both positive apply and release directions for controlling shift parameters of the transmission, based on a predetermined input; wherein a two-stage servo is used for controlling said brake band; wherein said servo has a first stage for rapidly applying band pressure, and a second stage for providing positive finite control of both apply and release pressures on said brake band during the shift.

Claims 16 and 17 have been canceled, without prejudice, and substantially incorporated into claim 13.

Neither Reichert et al. and/or Hatta et al., either alone or in combination therewith, teach or suggest such methodology.

Specifically, while Reichert et al. may arguably disclose a two-stage hydraulic circuit, there is no teaching of a method for “applying a first fast active compression force to said brake band to a predetermined position ... wherein a two-stage servo is used for controlling said brake band; wherein said servo has a first stage for rapidly applying band pressure, and a second stage for providing positive finite control of both apply and release pressures on said brake band during the shift.”

Hatta et al. does not cure the aforementioned deficiencies in the disclosure of Reichert et al.

Accordingly, the 35 U.S.C. 103(a) rejection of claim 13 has been overcome.

Because claim 13 is allowable over Reichert et al. and/or Hatta et al., either

alone or in combination therewith, for at least the reasons stated above, claims 18-21 and 23, which further define claim 13, are likewise allowable.

REJECTION UNDER 35 U.S.C. § 103(a)

Claims 4, 5, and 13-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP-11264460 to Hisano et al. in view of U.S. Patent No. 5,003,842 to Hatta et al.

The Applicant respectfully traverses the 35 U.S.C. §103(a) rejection of claims 4, 5, and 13-23.

The Examiner apparently cited Hatta et al. in order to cure the aforementioned deficiencies in the disclosure of Hisano et al. However, Hatta et al. adds nothing to the disclosure of Hisano et al. in terms of disclosing the structure and function of the two stage hydraulic servo of the present invention.

Because claim 1 is allowable over Hisano et al. and/or Hatta et al., either alone or in combination therewith, for at least the reasons stated above, claims 4 and 5, which further define claim 1, is likewise allowable.

Accordingly, the 35 U.S.C. 103(a) rejection of claims 4 and 5 has been overcome.

Claims 16 and 17 have been canceled, without prejudice, and substantially incorporated into claim 13.

Neither Hisano et al. and/or Hatta et al., either alone or in combination therewith, teach or suggest such methodology.

Specifically, while Hisano et al. may arguably disclose a two-stage hydraulic circuit, there is no teaching of a method for “applying a first fast active compression force to said brake band to a predetermined position ... wherein a two-stage servo is used for controlling said brake band; wherein said servo has a first stage for rapidly applying band pressure, and a second stage for providing positive finite control of both apply and release pressures on said brake band during the shift.”

Hatta et al. does not cure the aforementioned deficiencies in the disclosure of Hisano et al.

Accordingly, the 35 U.S.C. 103(a) rejection of claim 13 has been overcome.

Because claim 13 is allowable over Hisano et al. and/or Hatta et al., either alone or in combination therewith, for at least the reasons stated above, claims 14, 15 and 18-23, which further define claim 13, are likewise allowable.

REJECTION UNDER 35 U.S.C. § 103(a)

Claim 6 stands rejected under 35 U.S.C. §103(a), as being unpatentable over Reichert et al. in view of U.S. Patent No. 4,070,981 to Guinn et al.

The Applicant respectfully traverses the 35 U.S.C. §103(a) rejection of claim 6.

The Examiner apparently cited Guinn et al. in order to cure the aforementioned deficiencies in the disclosure of Reichert et al. However, Guinn et al. adds nothing to the disclosure of Reichert et al. in terms of disclosing the structure and function of the two-stage hydraulic servo, wherein the servo provides a rapid activation of the linkage during a first stage to rapidly expand the brake band, and a controlled compression and expansion of the brake band during a second stage.

Because claim 1 is allowable over Reichert et al. for at least the reasons stated above, claim 6, which further defines claim 1, is likewise allowable.

Accordingly, the 35 U.S.C. 103(a) rejection of claim 6 has been overcome.

REJECTION UNDER 35 U.S.C. § 103(a)

Claim 6 stands rejected under 35 U.S.C. §103(a), as being unpatentable over JP-11264460 to Hisano et al. in view of U.S. Patent No. 4,070,981 to Guinn et al.

The Applicant respectfully traverses the 35 U.S.C. §103(a) rejection of claim 6.

The Examiner apparently cited Guinn et al. in order to cure the aforementioned deficiencies in the disclosure of Hisano et al. However, Guinn et al. adds nothing to the disclosure of Hisano et al. in terms of disclosing the structure and function of the two-stage hydraulic servo, wherein the servo provides a rapid activation of the linkage during a first stage to rapidly expand the brake band, and a controlled compression and expansion of the brake band during a second stage.

Because claim 1 is allowable over Hisano et al. for at least the reasons stated above, claim 6, which further defines claim 1, is likewise allowable.

Accordingly, the 35 U.S.C. 103(a) rejection of claim 6 has been overcome.

REJECTION UNDER 35 U.S.C. § 103(a)

Claim 12 stands rejected under 35 U.S.C. §103(a), as being unpatentable over Reichert et al. in view of U.S. Patent No. 5,003,842 to Hatta et al., as applied to claim 9 above, and further in view of Guinn et al.

The Applicant respectfully traverses the 35 U.S.C. §103(a) rejection of claim 12.

The Examiner apparently cited Guinn et al. in order to cure the aforementioned deficiencies in the disclosure of Reichert et al. and/or Hatta et al. However, Guinn et al. adds nothing to the disclosure of Reichert et al. and/or Hatta et al. in terms of disclosing the structure and function of the two-stage hydraulic servo, wherein the servo provides a rapid activation of the linkage during a first stage to rapidly expand the brake band, and a controlled compression and expansion of the brake band during a second stage.

Because claim 9 is allowable over Reichert et al. and/or Hatta et al., either alone or in combination therewith, for at least the reasons stated above, claim 12, which further defines claim 9, is likewise allowable.

Accordingly, the 35 U.S.C. 103(a) rejection of claim 12 has been overcome.

CONCLUSION

In view of the foregoing, the Applicant respectfully requests reconsideration and reexamination of the Application. The Applicant respectfully submits that each item raised by the Examiner in the Office Action of December 27, 2002 has been successfully traversed, overcome or rendered moot by this response. The Applicant respectfully submits that each of the claims in this Application is in condition for allowance and such allowance is earnestly solicited.

The Examiner is invited to telephone the Applicant's undersigned attorney at (248) 364-4300 if any unresolved matters remain.

Please send all future correspondence relating to this application to Warn,
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Respectfully submitted,

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Dated: April 28, 2003

PRW:PHS:srk:jmz

Marked-up Version of the Amended Claims

The claims have been rewritten, as follows:

1. (Amended) A brake band mechanism for an automatic transmission having a brake drum, said mechanism comprising:

a brake band encircling the brake drum, said brake band including opposing ends, said brake band operable to be compressed and expanded around the brake drum;

a two-stage hydraulic servo; and

a linkage coupled to [the] said servo and [the] said brake band, said servo activating [the] said linkage to provide positive compression and expansion to [the] said brake band for applying friction to the brake drum to control [its] the brake drum's speed of rotation;

wherein said servo provides a rapid activation of said linkage during a first stage to rapidly expand said brake band, and a controlled compression and expansion of said brake band during a second stage.

4. (Amended) The mechanism according to claim 1 further comprising a position sensor, said position sensor sensing the position of a piston of [the] said servo.

5. (Amended) The mechanism according to claim 1 further comprising at least one linkage sensor, said at least one linkage sensor sensing the position of [the] said linkage.

6. (Amended) The mechanism according to claim 1 further comprising at least one band strain sensor, said at least one band strain sensor measuring the strain on [the] said brake band.

7. (Amended) The mechanism according to claim 1 wherein [the] said servo includes a first piston and a second piston, said first piston being smaller than [the] said second piston, said first piston being operable to provide rapid movement of [the] said brake band and said second piston being operable to provide fine adjustments of [the] said brake band.

8. (Amended) The mechanism according to claim 1 further comprising a clip structure, said clip structure being mounted to [an end] at least one of the opposing ends of [the] said brake band and being coupled to [the] said linkage.

9. (Amended) A brake band mechanism for an automatic transmission having a brake drum, said mechanism comprising:

a brake band encircling the brake drum, said brake band including opposing ends, said brake band operable to be compressed and expanded around the brake drum;

a linkage coupled to said brake band;

a two-stage hydraulic servo, said linkage coupled to said servo, said servo including a servo rod position sensor for determining [the] a position of a stroke rod of [the] said servo, said [two-stage] servo providing a rapid activation of the linkage during

a first stage to rapidly expand [the] said brake band, and a controlled compression and expansion of [the] said brake band during a second stage; and

[a linkage coupled to the servo and the brake band; and]

a clip structure, said clip structure being mounted to an end of [the] said brake band and being coupled to [the] said linkage, said servo activating [the] said linkage to provide positive compression and expansion to [the] said brake band for applying friction to the brake drum to control [its] the brake drum's speed of rotation;

wherein said servo includes a first piston and a second piston, said first piston being smaller than said second piston, said first piston being operable to provide rapid movement of said brake band and said second piston being operable to provide fine adjustments of said brake band.

11. (Amended) The mechanism according to claim 9 further comprising at least one linkage sensor, said at least one linkage sensor sensing the position of [the] said linkage.

12. (Amended) The mechanism according to claim 9 further comprising at least one band strain sensor, said at least one band strain sensor measuring the strain on [the] said brake band.

13. (Amended) A method of controlling [the] a shift of an automatic transmission comprising:

providing a brake band for engaging a brake drum of an automatic transmission, said brake band being positively controlled for both apply and release pressure around said brake drum;

applying a first fast active compression force to said brake band to a predetermined position; and

providing a closed loop control of pressure on [the] said brake band in both positive apply and release directions for controlling shift parameters of the transmission, based on a predetermined input;

wherein a two-stage servo is used for controlling said brake band;

wherein said servo has a first stage for rapidly applying band pressure, and a second stage for providing positive finite control of both apply and release pressures on said brake band during the shift.

14. (Amended) The method of claim 13 wherein said shift parameters [being based on] are selected from the group consisting of [band strain, seat acceleration, shaft torque, or a combination of these] servo position, apply strut strain, servo pressure, band strain, engine RPM, transmission torque output, and combinations thereof.

15. (Amended) The method of claim 13 [wherein said shift control is accomplished by] further comprising a closed loop software control system controlling an apply solenoid.

18. (Amended) The method of claim 17 wherein said method comprises controlling said shift by first ramping up the pressure at the beginning of said [shaft] shift and releasing pressure toward the end of said shift.

19. (Amended) The method of claim 18 wherein said brake band is locked in said applied position after the completion of [the] said shift.

20. (Amended) The method of claim 18 wherein [the] a switch between ramping up and closed loop control is determined by inputs selected from the group consisting of [a servo sensing position, strap strain, time and servo pressure, strain of the apply strut attached to the band, engine RPM, an accelerometer, transmission torque output, or] servo position, apply strut strain, servo pressure, band strain, engine RPM, transmission torque output, and combinations [of these] thereof.